VACCO

Positive Isolation Valve—Normally Open 1104900-01

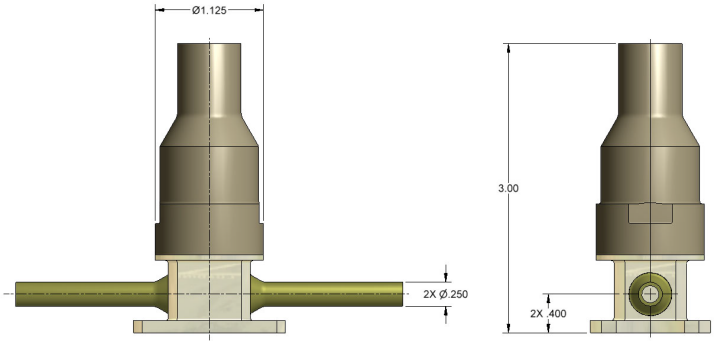
The VACCO Normally Open Positive Isolation Valve (PIV) is an ordinance-free “Drop-In” replacement for Pyrovalve applications. Features include all-welded titanium construction and a robust, electrically redundant non-pyro actuator. The normally open PIV features a metal-to-metal seat that provides a positive seal against internal leakage after actuation. The thick-walled titanium pressure boundary prevents external leakage when open or closed.

The PIV actuation mechanism closes the valve with a 100% force margin independent of inlet pressure. The PIV eliminates the explosion hazard, blow-by and shock loads inherent to traditional Pyro Valves.



Features

- High Operating Pressure (5,000 psi)
- High Flow Capacity
- All Welded Against External Leakage
- Robust Actuation Mechanism:
  - Eliminates Pyrotechnic Charge
  - Low Shock
  - Eliminates Blow-By
  - Electrically Redundant
  - Uses Existing Circuits
- Positive Isolation:
  - High Stress Metal-to-Metal Seat
  - Virtually Zero Debris Generation
  - Eliminates “Bounce Back”



Operating Parameters

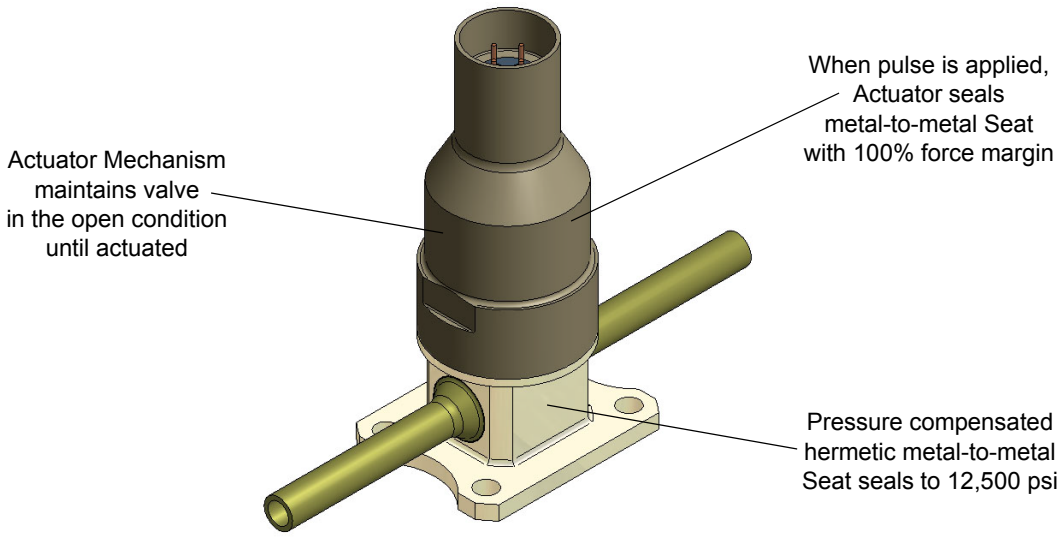
Inlet / Outlet Pressure Range	0 to 5000 psig
Proof Pressure	7500 psia
Burst Pressure	7500 psia
Operating Temperature	-34°C to +77°C
Flow Capacity	0.128 inch ESEOD
Operating Voltage	24 to 32 VDC
Inlet/Outlet Tubes	1/4 or 3/8 inch Ti
Iso Valve Response	< 40 Sec
Internal Leakage	<1 X 10^{-6} sccs GHe
External Leakage	<1 X 10^{-6} sccs GHe
Weight	132 grams (0.29 lbm)

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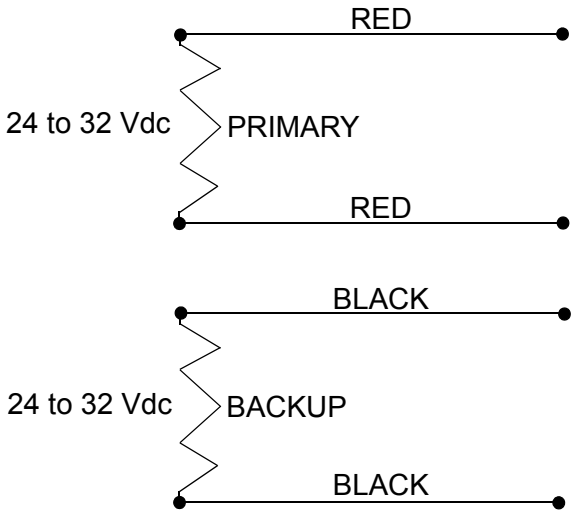
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Positive Isolation Valve



Electrical Schematic



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Positive Isolation Valve—Normally Closed 1104800-01

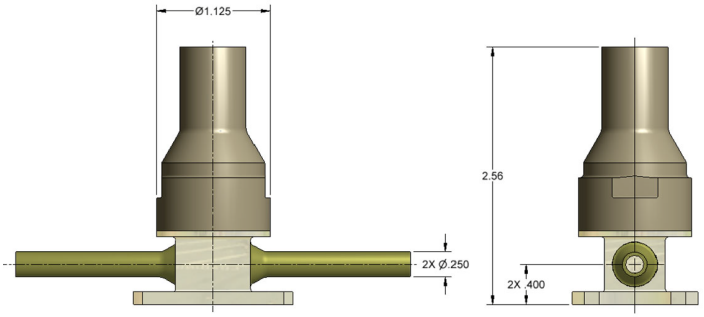
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The PIV actuation mechanism opens the valve with a 100% force margin independent of inlet pressure. The PIV eliminates the explosion hazard, blow-by and shock loads inherent to traditional Pyro Valves.

Features

- High Operating Pressure (5,000 psi)
- Positive Isolation:
  - Hermetic Titanium Barrier
  - Burst Tested to 20,000 psi
- All Welded Against Leakage
- Robust Actuation Mechanism:
  - Eliminates Pyrotechnic Charge
  - Low Shock
  - Precludes Blow-By
  - Electrically Redundant
  - Uses Existing Circuits
- Frangible Seat:
  - High Flow Capacity
  - Minimal Debris Generation
  - Positive Retention of Seat Parts



Operating Parameters

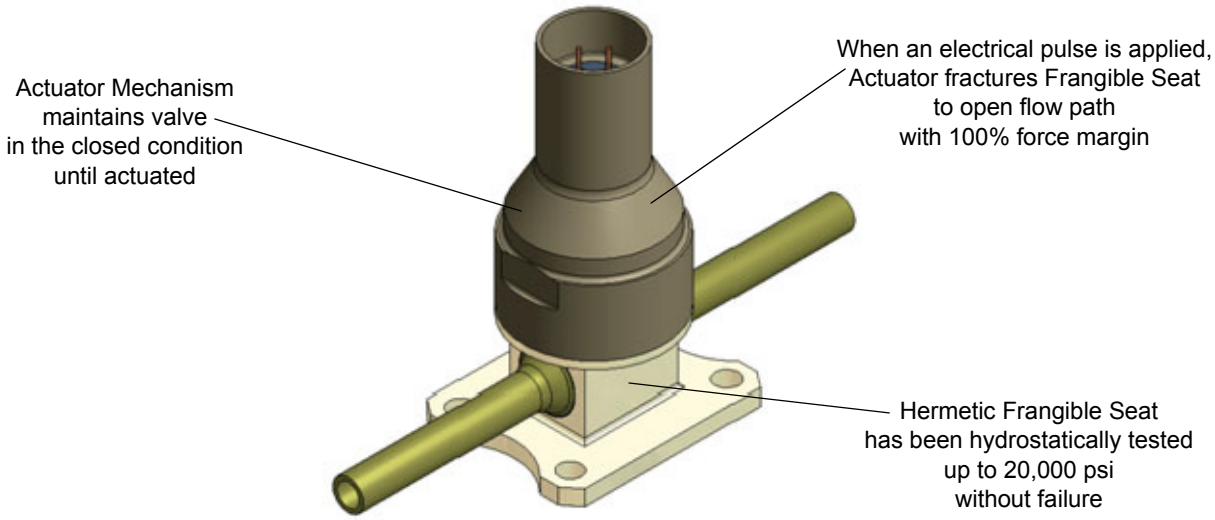
Inlet / Outlet Pressure Range	0 to 5000 psig
Proof Pressure	7500 psig
Burst Pressure	12500 psig
Operating Temperature	-34ºC to +77ºC
Flow Capacity	0.128 inch ESEOD
Operating Voltage	24 to 32 VDC
Inlet/Outlet Tubes	1/4” or 3/8” Ti
Iso Valve Response	< 40 Sec
Internal Leakage	<1 X 10^{-6} sccs GHe
External Leakage	<1 X 10^{-6} sccs GHe
Weight	100 grams (0x22 lbm)

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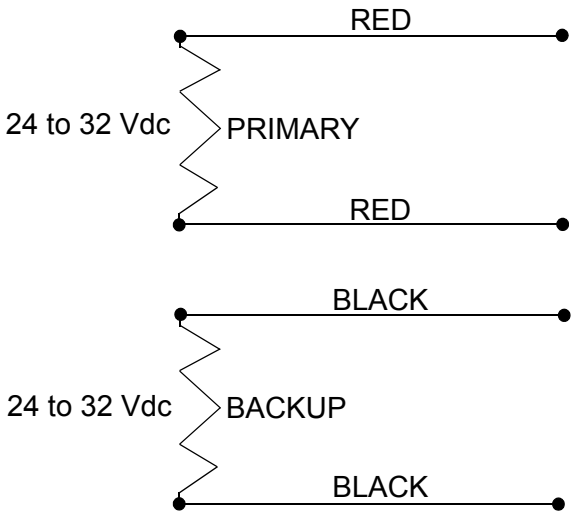
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Performance Characteristics



Electrical Schematic



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Positive Isolation Valve—Normally Open

X14024000-01

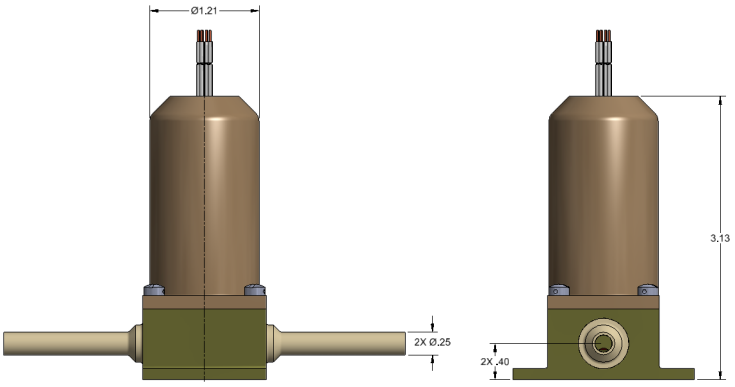
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The PIV actuation mechanism closes the valve with a 100% force margin independent of inlet pressure. The PIV eliminates the explosion hazard, blow-by and shock loads inherent to traditional Pyro Valves.

Features

- High Operating Pressure (5,000 psi/ 345 bar)
- High Flow Capacity
- All Welded Against External Leakage
- Robust Actuation Mechanism:
  - Eliminates Pyrotechnic Charge
  - Low Shock
  - Eliminates Blow-By
  - Electrically Redundant
  - Uses Existing Driver Circuits
- Positive Isolation:
  - High Stress Metal-to-Metal Seat
  - Virtually Zero Debris Generation
  - Eliminates “Bounce Back”



Operating Parameters

Inlet / Outlet Pressure Range	0 to 5000 psig/345 bar
Proof Pressure	7500 psia/517 bar
Burst Pressure	12500 psia/862 bar
Operating Temperature	-34ºC to +77ºC
Flow Capacity	0.128 inch ESEOD/3.25 mm
Operating Voltage	24 to 32 VDC
Inlet/Outlet Tubes	1/4 or 3/8 inch Ti
Iso Valve Response	< 120 Sec
Internal Leakage	<1 X 10^{-6} sccs GHe
External Leakage	<1 X 10^{-6} sccs GHe
Weight	0.50 lbs (227 gms) max

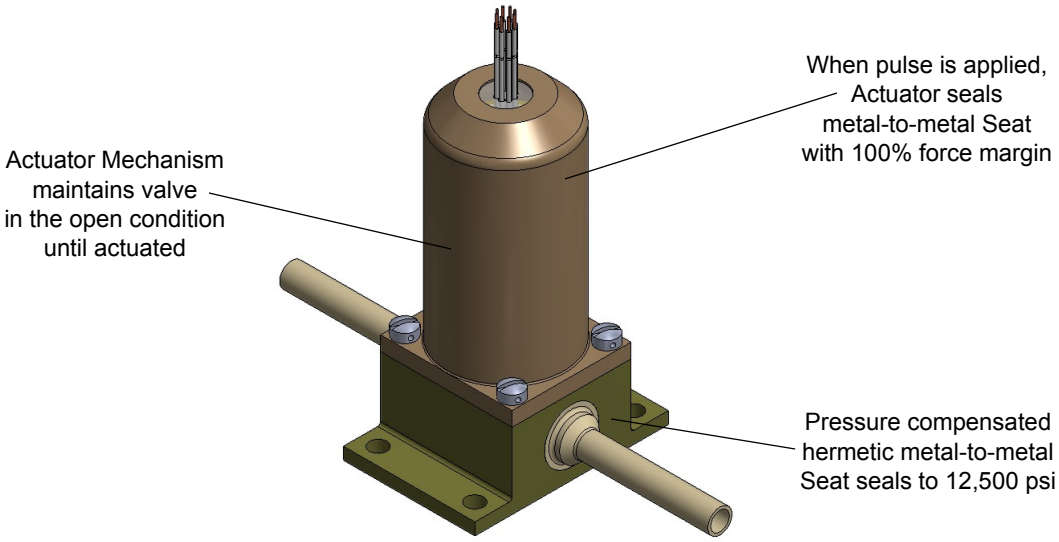
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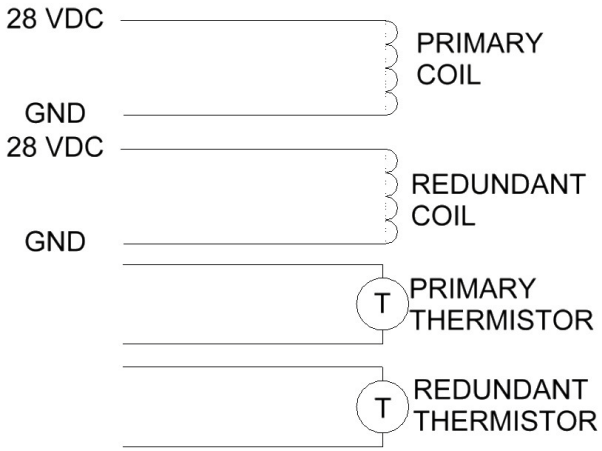
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Functional Diagram

X140240000-01



Electrical Schematic



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VACCO

Positive Isolation Valve—Normally Closed X13097000-01

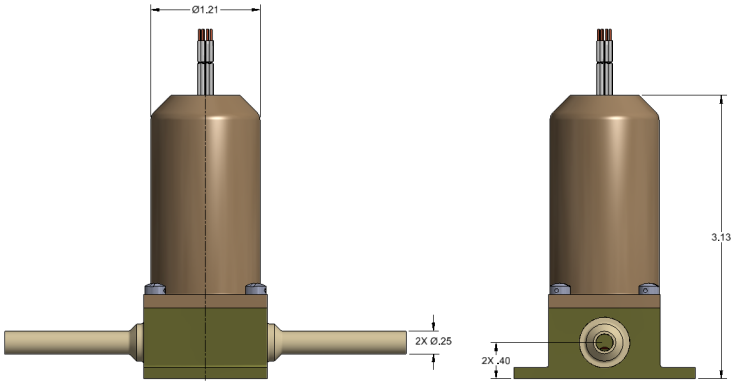
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Features

- High Operating Pressure (5,000 psi/ 345 bar)
- Positive Isolation:
  - Hermetic Titanium Barrier
  - Burst Tested to 20,000 psi
- All Welded Against Leakage
- Robust Actuation Mechanism:
  - Eliminates Pyrotechnic Charge
  - Low Shock
  - Precludes Blow-By
  - Electrically Redundant
  - Uses Existing Driver Circuits
- Frangible Seat:
  - High Flow Capacity
  - Minimal Debris Generation
  - Positive Retention of Seat Parts



Operating Parameters

Inlet / Outlet Pressure Range	0 to 5000 psig/345 bar
Proof Pressure	7500 psig/517 bar
Burst Pressure	12500 psig/862 bar
Operating Temperature	-34ºC to +77ºC
Flow Capacity	0.128 inch ESEOD/3.25 mm
Operating Voltage	24 to 32 VDC
Inlet/Outlet Tubes	1/4” or 3/8” Ti
Iso Valve Response	<120 sec
Internal Leakage	<1 X 10^{-6} sccs GHe
External Leakage	<1 X 10^{-6} sccs GHe
Weight	0.50 lbs (227 gms) max

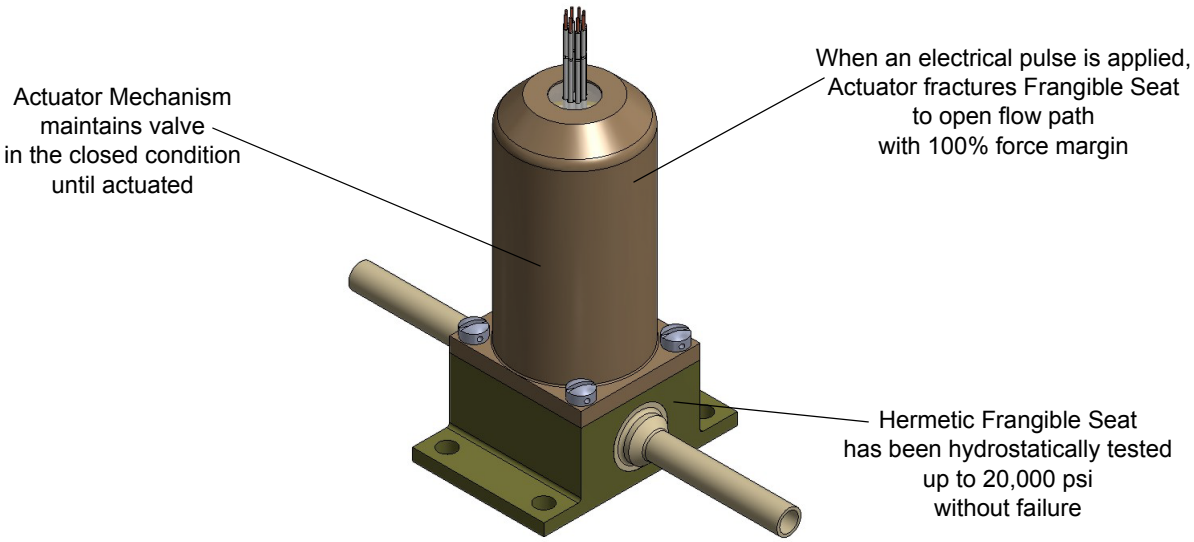
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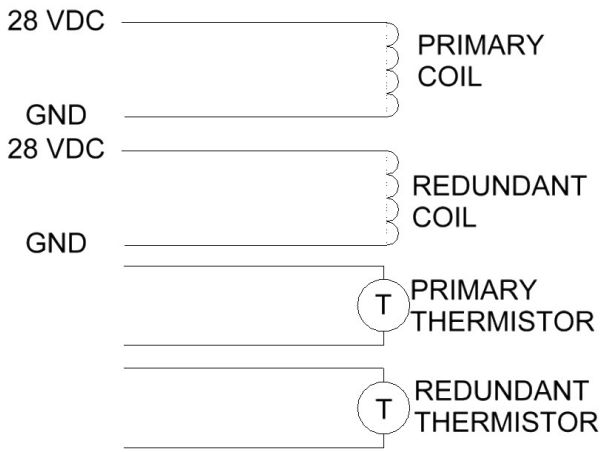
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Functional Diagram

X13097000-01



Electrical Schematic



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